

**(19) World Intellectual Property Organization
International Bureau**



A standard linear barcode is located at the top of the page, spanning most of the width. It is used for document tracking and identification.

(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009662 A1

(51) International Patent Classification⁷: C08F 220/34, (74) Common Representative: CIBA SPECIALTY CHEMICALS HOLDING INC.; Klybeckstrasse 141, CH-4057 Basel (CH).

(21) International Application Number:

PCT/EP2003/007637

(22) International Filing Date: 15 July 2003 (15.07.2003)

(25) Filing Language: English

(81) **Designated States (national):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TI, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(20) Publication Language: English

200

(36) Priority Data:
02405633.5 22 July 2002 (22.07.2002) EP
02020835.1 18 September 2002 (18.09.2002) EP

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) **Applicant (for all designated States except US): CIBA SPECIALTY CHEMICALS HOLDING INC. [CH/CH]; Klybeckstrasse 141, CH-4057 Basel (CH).**

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COPOLYMERS AND THEIR USE IN PERSONAL CARE COMPOSITIONS

$$\begin{array}{c}
 \text{R}_1-\text{CH}=\text{C}-\overset{\text{O}}{\text{C}}-\text{O}-\left(\text{CH}_2\right)_n-\overset{\text{R}_3}{\underset{\text{R}_5}{\text{N}}}+\text{R}_4 \\
 | \\
 \text{R}_2
 \end{array} \quad \text{Y} \quad (I)$$

$$\begin{array}{c} \text{O} \\ \parallel \\ \text{R}_6-\text{CH}=\text{C}-\text{C}-\text{N} \begin{array}{l} \text{R}_8 \\ | \\ \text{R}_9 \end{array} \end{array} \quad (\text{II})$$

(57) Abstract: The present invention relates to a copolymer derived from the polymerization of a) at least one cationic monomer of formula (I), wherein R_1 is hydrogen or methyl, R_2 is hydrogen or C_1 - C_4 alkyl, R_3 , R_4 and R_5 are independently from each other hydrogen or C_1 - C_4 alkyl, n is an integer from 1 - 5, and Y is a counterion, and b) at least one monomer of formula (II) wherein R_6 signifies hydrogen or methyl, and R_7 , R_8 and R_9 signify independently from each other hydrogen or C_1 - C_4 alkyl, with the proviso that at least one of the substituents R_6 , R_7 , R_8 and R_9 is C_1 -alkyl and c) optionally at least one cross-linking agent, which contains at least two ethylenically unsaturated moieties, as well as to their use in personal care product and to the personal care products.